

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently Amended) A system for regulating communications
2 between a plurality of transmitters and a receiver, comprising:
3 a plurality of cells, wherein each cell controls communications from a
4 transmitter in the plurality of transmitters to the receiver;
5 wherein the plurality of cells are arranged in a token ring that regulates
6 communications from the plurality of transmitters to the receiver;
7 wherein the presence of a token within a token ring cell indicates that the
8 corresponding transmitter may communicate with the receiver; and
9 wherein each cell is configured to receive a request signal from a
10 corresponding transmitter, and in response to the request signal, is configured to
11 issue an acknowledgement signal to the corresponding transmitter which allows
12 the corresponding transmitter to begin transmitting if the cell has the token; and
13 a flow control mechanism in each cell that receives a flow-control signal
14 from the receiver, wherein the receiver asserts the flow-control signal when the
15 receiver is ready to receive communications, and wherein the flow control
16 mechanism comprises logic for generating the acknowledgement signal by
17 logically combining a previous acknowledge signal from the cell with the flow-
18 control signal.
19 ~~an AND gate in the cell with an output and two inputs, wherein:~~
20 ~~a first input of the AND gate is coupled to a signal that is asserted~~
21 ~~when the cell has the token, has received a request from a transmitter to~~

22 transmit to the receiver, and has received an address for the receiver from
23 the transmitter,
24 a second input of the AND gate is coupled to a signal that is
25 asserted by the receiver when the receiver is ready to receive data, and
26 the output of the AND gate is coupled to an enable input of the
27 transmitter to enable the transmitter to transmit data to the cell for
28 forwarding to the receiver.

1 2. (Original) The system of claim 1, further comprising:
2 a plurality of receivers; and
3 a plurality of token rings, wherein each token ring passes a corresponding
4 token among token ring cells that control communications from the plurality of
5 transmitters to a receiver corresponding to the token ring.

1 3. (Previously presented) The system of claim 2, wherein the
2 plurality of cells are arranged in a grid wherein a row corresponds to a transmitter
3 and a column corresponds to a receiver.

1 4. (Original) The system of claim 1, wherein the communications can
2 include one of:
3 an electrical signal;
4 a mechanical signal; and
5 an optical signal.

1 5. (Cancelled)

1 6. (Currently amended) The system of ~~claim 5~~claim 1, wherein each
2 transmitter further comprises a reset mechanism that is configured to release the
3 clearance to communicate with the receiver by resetting the request signal.

1 7. (Original) The system of claim 6, wherein the system further
2 comprises an acknowledgement mechanism configured to confirm the release of
3 the clearance by resetting the acknowledgement signal.

1 8. (Original) The system of claim 1, further comprising an
2 initialization mechanism configured to initialize the single token in the token ring.

1 9. (Original) The system of claim 1, wherein the system operates
2 asynchronously.

1 10. (Cancelled)

1 11. (Currently Amended) A method for regulating communications
2 between a plurality of transmitters and a receiver, comprising:
3 receiving a request signal from a transmitter at a cell in a plurality of cells
4 requesting to communicate with the receiver;

5 wherein the plurality of cells are arranged in a token ring that regulates
6 communications from the plurality of transmitters to the receiver; and

7 in response to the request signal, issuing an acknowledgement signal to
8 the transmitter which allows the transmitter to begin transmitting if the presence
9 of a token is detected within the cell, wherein the acknowledgement signal is not
10 issued unless the receiver has asserted an enabling signal to the cell that indicates
11 that the receiver is ready to receive data and a flow-control signal has been
12 asserted by the receiver.

1 12. (Original) The method of claim 11, wherein the plurality of cells
2 include a plurality of token rings, wherein each token ring passes a corresponding

3 token among token ring cells that control communications from the plurality of
4 transmitters to a receiver corresponding to the token ring.

1 13. (Original) The method of claim 11, wherein a plurality of cells that
2 regulate communications between the transmitters and receivers are arranged in a
3 grid wherein a row corresponds to a transmitter and a column corresponds to a
4 receiver.

1 14. (Original) The method of claim 11, wherein the communications
2 can include one of:
3 an electrical signal;
4 a mechanical signal; and
5 an optical signal.

1 15. (Original) The method of claim 11, further comprising revoking
2 the permission for the transmitter to communicate with the receiver when the
3 transmitter resets the request signal.

1 16. (Original) The method of claim 15, further comprising resetting
2 the acknowledgement signal to confirm the revocation of the permission for the
3 transmitter to communicate with the receiver.

1 17. (Original) The method of claim 11, further comprising initializing
2 the token in the token ring.

1 18. (Original) The method of claim 11, wherein the system operates
2 asynchronously.

1 19. (Cancelled)

1 20. (Currently Amended) A multi-processor system, comprising:

2 a plurality of processors;

3 a plurality of transmitters associated with the processors;

4 a plurality of receivers associated with the plurality of processors;

5 a plurality of cells, wherein each cell controls communications from a

6 transmitter in the plurality of transmitters to a receiver;

7 wherein the plurality of cells are arranged in a token ring that regulates

8 communications from the plurality of transmitters to a receiver;

9 wherein the presence of a token within a token ring cell indicates that the

10 corresponding transmitter may communicate with the receiver; and

11 wherein each cell is configured to receive a request signal from a

12 corresponding transmitter, and in response to the request signal, is configured to

13 issue an acknowledgement signal to the corresponding transmitter which allows

14 the corresponding transmitter to begin transmitting if the cell has the token; and

15 a flow control mechanism in each cell that receives a flow-control signal

16 from the receiver, wherein the receiver asserts the flow-control signal when the

17 receiver is ready to receive communications, and wherein the flow control

18 mechanism comprises logic for generating the acknowledgement signal by

19 logically combining a previous acknowledge signal from the cell with the flow-

20 control signal.

21 an AND gate in the cell with an output and two inputs, wherein:

22 a first input of the AND gate is coupled to a signal that is asserted

23 when the cell has the token, has received a request from a transmitter to

24 transmit to the receiver, and has received an address for the receiver from

25 the transmitter,

26 a second input of the AND gate is coupled to a signal that is

27 asserted by the receiver when the receiver is ready to receive data, and

28 the output of the AND gate is coupled to an enable input of the
29 transmitter to enable the transmitter to transmit data to the cell for
30 forwarding to the receiver.